

Remarks

Applicants' invention is directed to adhesively joining or sealing two substrates using a controlled structure polyisocyanate prepolymer composition based on 4,4'-diphenylmethane diisocyanate (MDI) reacted with a polyol composition comprising a propylene oxide based polyether polyol (PPG). Such MDI based prepolymer composition has low levels of oligomer content and residual MDI monomer content; i.e., the polyisocyanate prepolymer reaction product consists essentially of at least 80 wt% of a stoichiometric "perfect" prepolymer and contains less than 2 wt% unreacted MDI monomer. The concept of a "perfect" prepolymer is explained at page 4/3-15. Prepolymer compositions typically contain perfect prepolymers and oligomers and, depending upon how the prepolymers are prepared, the perfect prepolymer content can vary widely. With regard to the unreacted MDI monomer, prepolymer reaction product compositions typically contain large amounts of unreacted monomer because the monomer is used in great excess, especially when the desire is to maximize the perfect prepolymer content. The unreacted monomer can either be left in the reaction product or reduce in quantity using various purification techniques. When used in adhesive compositions for joining or sealing two substrates, Applicants' claims define the required perfect prepolymer content and the required low level of unreacted MDI monomer of the polyurethane prepolymer composition for affording the advantages as stated at page 5/1-12. Such advantages include improved green strength, improved ambient development of strength, and laminating adhesives showing longer pot lives while maintaining faster development of adhesive strength. Such advantages are demonstrated in Applicants' Examples 5, 6, and 7 using the MDI/PPG-based prepolymer compositions of Examples 1-4.

Applicants affirm the election of Claims 19 and 20 for prosecution in the present Application. Claims 19 and 20 being in dependent form have been canceled and rewritten as new independent Claims 21 and 31, respectively. With the cancellation of Claims 1-20, Claims 21-36 are now pending.

The Examiner contends that this Application does not contain an abstract of the disclosure. Applicants' file copy of the specification contains such abstract of the disclosure as page 19 and are surprised the Examiner's file copy does not. Since such page 19 was not included with the application papers, the specification has been appropriately amended.

The Examiner has objected to the disclosure because of the small print "ML02101.APP" appearing on page 14. The Examiner is advised that such print is the

Applicants' document number and Applicants are unaware of any requirement that such document number cannot appear on any page of the specification. Unless the Examiner cites authority requiring removal of a document identifier, Applicants contend its presence is completely acceptable.

The Examiner has rejected Claims 19 and 20 under 35 USC 112, first paragraph, alleging the specification does not reasonably provide enablement for all the substrates in the "field of chemistry" contending that the use of oriented polypropylene film and zinc cold rolled steel as a substrate is not sufficient exemplification.

Applicants contend that this rejection by the Examiner is without merit. The relevant field is not all of chemistry but rather the field of joining or sealing substrates with adhesives. Applicants at page 8/19-21 cite a number of substrates that may be bonded using adhesive compositions containing the prepolymers of the present inventive concept. Applicants at page 4/16-24 have broadly disclosed how to adhesively join or seal two substrates using the MDI/PPG-based prepolymer compositions as adhesives and in the examples Applicants have shown how to specifically join or seal two such substrates. Such teaching is applicable to all the substrates in the field of adhesively joining or sealing films and sheets. The disclosure is written to a worker of ordinary skill in the art and in the art of adhesives used for joining substrates such as films and sheets, the skilled worker well knows how to use the adhesive compositions and the substrates to be used in his application.

Accordingly, Applicants submit that the skilled worker knows any solid substrate as used in the art can be joined or sealed merely by applying the adhesive composition to at least one substrate surface and contacting the adhesive composition on the substrate to a second substrate surface of same or different material such that a bond is formed. The first substrate can act as the second when it is folded for joining or sealing. Applicants submit Examiner has failed to meet his burden of establishing that such disclosure by Applicants does not enable Claims 19 and 20.

Moreover, the Examiner argues the specification does not provide sufficient working examples and that more than routine experimentation is required and involved. In support of his position, the Examiner cites two cases (citations were not correct).

Applicants are unaware of any legal requirement that a certain minimum number of working examples are necessary to satisfy the enablement requirement. A disclosure which

contains representative examples which provide reasonable assurance to one skilled in the art that the compounds falling within the scope of a claim will possess the alleged utility is all that is required, when there is no reason to suspect the assertions are not accurate. *In re Barr et al*, 170 USPQ 330 (CCPA 1971). An applicant need not provide a specific example of everything embraced by a broad claim. *In re Anderson*, 176 USPQ 331 (CCPA 1973). The number and variety of examples are irrelevant if the disclosure is "enabling" and sets forth the "best mode contemplated". Although at one time the PTO required at least one "working" example as part of the disclosure of the specification, there is no absolute statutory requirement for such an example if the disclosure is such that one skilled in the art can practice the claimed invention. *In re Borkowski et al*, 164 USPQ 642 (CCPA 1970). The PTO has the burden of showing that the disclosure entails undue experimentation. *In re Angstadt*, 190 USPQ 214 (CCPA 1976).

In view of the above remarks, the fact that the specification is directed to one skilled in the art, and the above case law, the Examiner's positions about insufficient working examples and undue experimentation have been refuted. Applicants request reconsideration and withdrawal of this 112, first paragraph, rejection.

Claims 19 and 20 were rejected under 35 USC 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which Applicants regard as the invention. The Examiner alleges the term "substrates" are not described as to what those substrates would be in "details". Applicants contend that this rejection is also without merit.

As argued above, the disclosure is written to a worker of ordinary skill in the art and in the art of adhesives used for joining substrates such as films and sheets, the skilled worker well knows what substrates are suitable for his application. Furthermore, the claims are in Jepson-claim format. In the conventional Jepson claim, the portion of the claimed subject matter which relates to the prior art is placed in the preamble. Rule 75(e) of the Rules of Practice states that "where the nature of the case admits, as in the case of an improvement . . . those elements or steps of a claimed combination which are conventional or known should be recited in a preamble which is followed by a recitation of the portion of the invention which the applicant considers new or improved." Applicants are not required to include in the specification that which is known in the art.

Nevertheless, Applicants disclose various useful substrates at page 8/19-21. Such claims, in view of the specification, indeed particularly point out and distinctly claim the subject matter that Applicants regard as their invention.

In view of the above remarks, Applicants request reconsideration of this 112, second paragraph, rejection and its withdrawal.

Claims 19 and 20 were rejected under 35 USC 103(a) as being unpatentable over EP 0827995 (McInnis). The Examiner has incorrectly cited EP '995 as "Lee et al".

Applicants concede that McInnis broadly teaches a method for joining or sealing two substrates using a hot melt adhesive comprising low free monomer, low oligomer content, isocyanate prepolymers. McInnis broadly suggests numerous polyisocyanates and numerous polyols that can be used to make his prepolymer compositions. Applicants contend however that McInnis is deficient with respect to any teaching or suggestion of the specific prepolymer reaction product of an MDI polyisocyanate reacted with the defined polyol composition comprising a propylene oxide based polyether polyol (PPG). Furthermore, there is no teaching or suggestion in McInnis that the use of such defined MDI/PPG-based prepolymer compositions would afford the advantages demonstrated in Applicants' Examples 5-7.

In view of the above remarks Applicants request reconsideration of the 103 rejection based on McGinnis and its withdrawal.

Believing the Application is in condition for allowance, Applicants solicit an action to that effect.

Respectfully submitted,



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Encl.